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ABSTRACT

Historically, radio broadcasting has been affected by innovational, social, technological, and economic change. For instance, FM (frequency modulation) radio emerged out of a desire to free broadcasting of static noise common to AM (amplitude modulation) signals. The eventual response by AM was to improve the technology of the signal. The inquiry for the feasibility of stereo broadcasting for AM and the suitable technological standard to set began in 1977. By 1982 the Federal Communications Commission (FCC) revealed an intention to allow the marketplace to decide the fate of AM stereo. During these years several actions by the FCC indicated that it was uncertain of its proper regulatory role. The process of wrestling with whether to set a technological standard led the FCC to question its own responsibility in such matters. Ultimately, the FCC determined that it was not responsible for the success or failure of any particular technology and that the proper technology selection should be passed on to the marketplace. (One table of data is included, and 110 references are appended.) (MS)

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FROM GOVERNMENTAL STANDARD-SETTING TO THE MARKETPLACE

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FCC POLICY AND AM STEREO:
FROM GOVERNMENTAL STANDARD-SETTING TO THE MARKETPLACE

Historically, radio broadcasting has been affected by innovational, social, technological, and economic change. For instance, FM radio emerged out of a desire to free broadcasting of static noise common to AM signals (Barnouw, 1968, p. 40). By 1961, FM became the first of the broadcast media to implement stereo (FCC, 1961, p. 3533; Carrol & Kolodin, 1961, p. 38). Because of an even more improved sound quality, FM stereo became more attractive to listeners (Stereo AM: Coming soon, 1982, p. 58; NAB's agenda for AM action, 1985, p. 58).

Consequently, to combat FM stereo's sound superiority, AM programmers resorted to voice-only formats, such as news, information, and talk, which relied little on the high fidelity sound desired by music-oriented listeners. However, the strategy failed miserably (AM: Band on the run, 1985, p. 46). In just 12 years, FM radio reversed AM's historic stranglehold in the ratings. Seventy percent of all radio listeners tuned in to AM in 1973. By 1985, FM controlled 70 percent of the radio audience (AM: Band on the run, 1985, p. 35; FM share, 1985, p. 1). Ten more years at the same rate of decline would leave AM radio with no listeners (AM: Band on the run, 1985, p. 35).

The answer to AM's problems lay in improving the technology of the signal. The first step was taken when the Federal Communications Commission (FCC) began its inquiry into the feasibility of stereo broadcasting for AM in 1977 (FCC, 1977, pp. 34910-34913). However, after five years of intensive

internal deliberation, the FCC in 1982 revealed it would leave a broadcast technology decision to the marketplace for the first time in Commission history (FCC, 1982, p. 17). In the Report and Order, the Commission described the move as "a bold, new step" (p. 17). Sterling (1982) agreed, calling the FCC's AM stereo decision "a benchmark" in the "regulation of changing technology" (p. 137).

Purpose

The purpose of this paper is to document the FCC's AM stereo process up to and including the "benchmark" marketplace decision (1977-1982). Because of its major role in the AM stereo story, the "deregulation of radio" proceedings also receive attention. Hopefully, such an undertaking will at least partially fill a glaring gap in the literature for such an important historical series of events.

AM stereo -- The FCC's Notice of Inquiry

The broadcasting industry appeared to be ready for AM stereo in 1977 (Abrams, 1977, p. A-24). On June 22, 1977, the FCC adopted its notice of inquiry into the AM stereo matter. The FCC stated that Kahn Communications, Inc. (Kahn) and the Association for AM Stereo, Inc. (AAMSI) had petitioned for a move toward AM stereo approval. AAMSI noted that "AM Stereo is an idea whose time has come" (FCC, 1977, p. 34910). The FCC cited the need for giving AM a chance at technical parity with FM:

> Although research has been conducted on both AM and FM single station systems of stereophonic transmissions, the primary attention was directed toward FM station stereophony because FM was considered to be a high-fidelity program service less subject to noise and interference, and stereophonic transmission could be more readily implemented in the developing FM broadcast service. At the present time, nearly 45% of all radio broadcast stations are FM stations, and a large majority of those FM stations transmit stereophonic programming. For a number of years all music

> recordings . . . have been made in the stereophonic mode. A major segment of the electronics industry is involved in the supplying of equipment for reproducing stereophonic programs in homes and automobiles. The stereophonic recording, transmission, and reproduction of music and other programming has been fully developed and in use for some time, except in the AM and television broadcast services. (p. 34910).

The main objective of the FCC's notice was to "determine if there was an interest and need for" AM stereo (p. 34910). In so doing, the Commission hoped to gather as much technical data as possible (FCC, 1977, p. 34911; FCC engineers, consultants, 1979, p. 61; Harris Corporation, Undated, p. 2). Kahn believed the FCC was delaying. The company contended it had amassed considerable in-house research, even to the extent of establishing a list of AM stereo technical criteria. In fact, Kahn, Magnavox, and Motorola had received and taken advantage of an FCC authorization to experiment with actual on-air testing of AM stereo:

> In 1975, Radio Station WFBR, Baltimore, Maryland, was authorized to conduct experimental transmissions using the Kahn system of AM stereophonic broadcasting. The station's report of the test results is being made a part of other authorized experimental AM stereophonic testing including those from Station WKDC, Elmhurst, Illinois using the Magnevox [sic] system received by the Commission will also be made part of the record. (FCC, 1977, p. 34911)

In the 1977 notice, the FCC called for response from the National AM Stereophonic Radio Committee (NAMSRC), Kahn, and any other sources that might provide "additional technical information or suggested performance standards for AM stereophonic broadcasting to participate in this proceeding to the extent possible" (p. 34911).

More than a year after completion of the testing, the FCC followed up the NAMSRC study and adopted its "Notice of Proposed Rulemaking for AM stereocasting" (FCC, 1978, p. 1; FCC makes it Magnavox, 1980, p. 27). In the notice, the FCC received responses

from more than 90 sources. Many of the comments were from broadcast stations, networks, equipment manufacturers, and other interested parties writing in favor of the concept of AM stereo. The FCC summarized the reactions received:

> 5. Responses to the Notice of Inquiry express the view that FM stereophonic radio service is inadequate in automobiles and at fairly long distances from broadcasting stations. It is further noted that many small communities have only AM stations and thus are lacking local stereophonic radio service. Regarding the possible impact of AM stereo on the continuing development of FM broadcasting, it is reported that in many markets FM stations have already surpassed AM stations in audience and revenue. Many AM licensees claim that AM stereo is needed to keep their stations competitive. Additionally, it is claimed that the stereo performance of FM broadcasts in automobiles is poor due primarily to fading and multipath which should not be a problem with AM stereo. (FCC, 1978, p. 2)

In essence, the FCC acknowledged the change in audience shares which had occurred during the 1970s prompting justification of AM stereo. In addition, flaws in FM broadcasting were highlighted, such as its tendencies to be limited in range. However, the FCC further explained that while many respondents believed AM stereo "could become a high fidelity medium," FM would probably maintain higher favor with those listeners interested in high fidelity (p. 2). AM stereo was considered to be better than no stereo in communities without access to FM (p. 2).

All factions responding to the inquiry were listed in the appendix to the notice. The most important replies came from the five competitors vying to have the FCC pick their respective AM stereo transmitting systems as the industry standard. Harris Corporation, Belar Electronics, Motorola, and Magnavox "submitted complete technical descriptions" of their respective systems (FCC, 1978, pp. 1-2).

The FCC had substantial data on file concerning the fifth

system, Kahn, which had applied for AM stereo approval when the FCC originally considered broadcast stereo in 1960 (FCC, 1960b, p. 19667). Nevertheless, Kahn submitted further comments (FCC, 1978, pp. 1-2).

The Commission offered "a brief description of each of the five AM stereo systems," and stated that each "is basically similar" in meeting uniform broadcast standards, such as compatibility with existing mono AM equipment (p. 3). The chief advantage of each lay in the fact that stereo on AM could be accomplished, and the systems could neutralize the poor fidelity and frequency response of AM radio -- major contributors to AM's poor sound quality which the FCC had considered improbable to surpass just 20 years earlier. The basic difference in each is that stereo is transmitted differently, making receiver incompatibility the major disadvantage of all the systems:

> A signal coded by the Belar system cannot be used by a Harris-circuit radio, for instance. If the FCC . . . simply let broadcasters use whichever system they chose, you'd need a radio with four decoders to be sure of getting stereo sound. (Hawkins, 1980, p. 47)

More than another year passed before the FCC announced any further information on AM stereo. William LaFollette, an FCC spokesperson, explained that the staff was "swamped" with other business (No go, 1979, p. 7). Some of that "other business" directly affected AM stereo. An important event was unfolding: the FCC's deregulation of radio.

The FCC Studies Radio Deregulation

On Friday, October 5, 1979, the FCC released its Inquiry and Proposed Rulemaking; Deregulation of Radio:

> With this Notice, the Commission proposes to modify or eliminate certain rules applicable to commercial broadcast

> stations. The proposed deregulation encompasses limits on commercial matter, guidelines for the amount of non-entertainment programming, and formalized procedures for the ascertainment of community needs and interests. (FCC, 1979, p. 57636)

The FCC emphasized that deregulating radio did "not represent a sudden change in direction" (p. 57636). The move had started in 1972 with a "re-regulation study" prompted by technological change:

> 2. The proceeding that we are instituting reflects the Commission's continuing concern that its rules and policies should be relevant to an industry and a technology characterized by dynamic and rapid change. It also reaffirms the Commission's commitment to fostering a broadcast system that maximizes the well-being of the consumers of broadcast programming. (p. 57636)

The FCC apparently made a great distinction between the terms technical and technological. In paragraph 1 of the inquiry, the Commission stated the deregulation proposed only "rule and policy changes that would remove current requirements in nontechnical areas" (p. 57636). At various points in the docket, the Commission mentioned that deregulation would perhaps bring about new technologies. As would be emphasized in a future FCC docket, the Commission would encourage new technology while enforcing minimum "technical parameters" of "acceptable performance" (FCC, 1982, p. 17). In effect, the FCC's primary concern would be to ensure that any technological system must be of certain technical quality. New technology, then, would be encouraged but limited in minimum performance requirements. The FCC indicated at least 800 unnecessary rules and regulations were either updated or stricken between 1972 and 1979. The Commission further explained that Presidential guidelines were being followed "to adopt procedures to improve existing and future regulations,

including the deletion of unneeded ones" (p. 57636).

Of vital importance to the FCC, according to information in the deregulation docket, was the fact the Commission had always operated in the public interest and would continue to do so. The Commission explained its role as a public interest regulator:

> We have long been, and remain, committed to the principle that radio must serve the needs of the public. We have never, however, believed that radio is a static medium that requires the retention of every rule and policy once adopted. A regulation that was reasonable when adopted, and appropriate to meet a given problem, may be most inappropriate if retained once the problem ceases to exist. (p. 57636)

A large portion of the deregulation docket consisted of the historical relationship between the FCC and broadcasting from the Radio Act of 1912 until the Communications Act of 1934. The Commission attempted to demonstrate the lack of change in the government's approach to regulation despite vast change within the broadcast industry. After covering other events which occurred after 1934, the FCC reevaluated its "current regulatory approach in light of changed circumstances" (p. 57644). The Commission offered its own idea of the meaning of "public interest":

> It was clear from the very beginning of broadcasting that radio was a rapidly developing medium. Accordingly, Congress' efforts to legislate in the area were complicated by the need to write a law at a fixed point in time that would be sufficiently flexible to allow for this quickly changing technology and industry. Therefore it couched the Commission's regulatory authority in terms of the public interest, convenience, and necessity. Thus, the Commission was given neither unfettered discretion to regulate all phases of radio nor an itemized list of specific manifestations that it could or should regulate. (p. 57644)

A major theme in much of the deregulation rhetoric centered on the FCC's position as a content regulator. The new role was to be shifted from regulation of content to regulation of "structural vehicles" such as efficient use of the spectrum and increases in

the "diversity of voices represented in broadcasting" (p. 57645).

As for AM and FM broadcasting, the Commission recognized that in 1979 FM had gained parity in audience numbers. The Commission also noted the processes by which FM pulled even. These methods included reducing commercial time and capitalizing on superior sound technology (p. 57646). The FCC also acknowledged three problems which plagued the development of FM: (1) "relatively few radio receivers with FM capability," (2) "FM signals cannot be transmitted as far as AM signals," and, (3) "the advent of television" (p. 57646). The FCC added that FM stations had overcome any disadvantages to become "a viable and profitable competitive force" (p. 576456). If AM stations were to regain any lost audience shares they would have to be creatively responsive to these "strong competitive pressures" (p. 57646). While FM had gained parity with AM, the FCC gave no indication of what would happen if FM totally reversed its fortunes to dominate as it had been dominated. The FCC admitted stereo had helped FM gain its parity (p. 57646), yet no mention is found of AM stereo in the inquiry -- despite the ongoing AM stereo approval process.

In conclusion, the Commission said: "Alternatives that have not been set forth . . . may also be proposed" (p. 57667). Deadline for filing comments was set for January 25, 1980, and for replying to those comments the deadline was set for April 25, 1980 (p. 57667).

In 1979, several groups asked the FCC to expedite its authorization of AM stereophonic broadcasting (Not whether, 1979, p. 75). It was evident that authorization of AM stereo would happen eventually, but American Broadcasting Company (ABC) network

officials, among others, felt that there was an immediate need for the technology. Representatives for ABC stressed that both the listening public and the broadcasters were "ready, willing and able" for the advent of AM stereo. Several reasons were offered:

> There is a public acceptance of and demand for stereo services; it would offer stereo services to areas not now served by FM stereo; it would provide better performance for listeners in autos; it would increase programming alternatives and options for listeners, and it would facilitate competition between AM and FM services, which would be to the public's benefit. (p. 75)

In 1979, 10 to 15 percent of the population in the United States could not get broadcasts in FM stereo, because FM stereo needed stronger signal power than monophonic FM transmissions, and because fewer FMs than AMs existed in rural North America (Graham, 1979, p. 53).

The FCC's "Tentative" AM Stereo System Standard

On March 31, 1980, Broadcasting reported an AM stereo announcement might be forthcoming. It was rumored the FCC might even pick as many as three systems:

> Now word had leaked that the FCC staff may, instead, recommend that three systems be approved -- a thought that panics many of the potential players. The National Association of Broadcasters and the National Radio Broadcasters Association both oppose the multiple system concept, as do four of the manufacturers that proposed systems . . . Only one -- Leonard Kahn -- favors the notion. (Three's a crowd, 1980, p. 30)

If the information were substantiated, then a new twist had developed. Previously, the FCC was expected to rule for all, or for one. The "three systems" idea was a new and surprising consideration. Those who were against the multisystem approach felt that AM stereo would be put into such a chaotic state of affairs that no one would touch it. It was feared the end result would be death for AM stereo. Executive Vice President of

Governmental Relations of the National Radio Broadcasters Association, Abe Voron, chastised the FCC: "In the one area the FCC ought to exercise its mandate -- in the technical area --it has chosen to abdicate its responsibility and create what I feel will be a chaotic situation" (p. 30). Meanwhile, the FCC's chief scientist, Stephen Lukasik, cautioned that rumors should be ignored. Another FCC spokesperson indicated AM stereo might be included on the April 9, 1980, Commission agenda (p. 30).

On that date the FCC did in fact announce a "tentative" decision, selecting a single system (Bad vibes, 1980, p. 25). Magnavox was chosen by a vote of 4-2 with one Commissioner not voting. Voting for the Magnavox system were Chairman Charles D. Ferris, Joseph R. Fogarty, James H. Quello, and Abbott Washburn. The opposing votes were cast by Tyrone Brown and Anne P. Jones. Commissioner Robert E. Lee was absent from the proceeding (FCC makes it Magnavox, 1980, p. 27).

Naturally, the other manufacturers were upset, despite supporting the selection of a single system --all except Kahn had gone on record before the decision as proponents of an FCC standard decision. Only Kahn was in favor of the marketplace all along, and he predicted that the FCC's single system choice would delay AM stereo even longer. Kahn said that he was certain his company would initiate some kind of action, but he was unsure what channels might be pursued. He stated: "I am going to try to convince the commission to change its mind" (There's only one happy manufacturer, 1980, pp. 27-28). Kahn also suggested he might ask the Commission to reconsider and to hold a public hearing. Kahn explained: "We [Kahn Communications, Inc.] believe

it would be good for the Commissioners" (p. 28).

The FCC did say if enough AM engineers across the country filed complaints the issue might be reconsidered (The FCC on the firing line, 1980, p. 44). Commissioner Robert Lee admitted a mistake may have been made by going with Magnavox and the single system idea. Harris, Motorola, and Kahn later formally asked the FCC to release the results from which the choice was made (Bad vibes, 1980, p. 80).

By June 1980, the FCC confessed that a further notice of proposed rulemaking would be issued (FCC brings AM stereo, 1980, p. 19). The announcement came despite the FCC's earlier plans to support the Magnavox selection. Broadcasting speculated the FCC was experiencing difficulty with an adequate defense, and that another system would perhaps be selected. Indeed, the FCC's Chief Scientist, Stephen Lukasik, stated: "There is no doubt the Commission . . . wants one system . . . What the notice will explore is the best way to choose that one system" (p. 19).

Reconsideration of the Magnavox Decision

In its further notice of July 31, 1980, the FCC said the "tentative" Magnavox decision had been cancelled (FCC, 1980, p. 2). A spokesperson for the FCC's Office of Science and Technology reported to the Commission that "the selection of Magnavox was not wholly defensible" (The final days, 1980, p. 23). The explanation was initially considered unacceptable by the FCC commissioners, who had thoughts of forcing the OST to finish the task originally ordered --to defend the Magnavox decision. Instead, the Commissioners opted to spend more time studying the systems, in which case the Magnavox system would emerge as the winner.

Tyrone Brown and Anne P. Jones, the two Commissioners who originally voted against Magnavox, refused to agree to the adoption of the further notice unless a compromise could be reached. Both Commissioners wanted the choice to be between governmental standard-setting and the open marketplace. Once the other Commissioners agreed to include in the notice a call for comments on the marketplace idea and universal decoders, Brown and Jones agreed to support the further notice -- making the decision unanimous (p. 23).

The Commission was embarrassed. FCC Commissioner Abbott Washburn said the organization had taken "a step backwards" (p. 23). Not only had the Commission backed down on a system standard decision, a possibility existed the decision would be passed on to the marketplace. Robert Lee, who had not attended the meeting of April 9, 1980, said he had agreed with the majority who backed both the single system concept and Magnavox. Lee complained: "I don't know why we can't stick to our guns" (p. 23).

A spokesperson for Motorola expressed the company's happiness and praised the FCC's move. Leonard Kahn, an ardent supporter of the marketplace, said he knew of technology which would make the decision a moot point -- a multidecoding receiver. He indicated that it "would add only four to six percent to the cost of a receiver "and that his idea had already been confirmed by an unspecified firm he called "one of the largest . . . in the world" (p. 26). No deadline for a final AM stereo decision was given by the FCC, or for an announcement by Kahn concerning a multidecoder.

A representative of Magnavox, Bill Streeter, indicated the

FCC's further notice could not be interpreted as "good" or "bad". A Harris Corporation attorney was "generally pleased" (p. 26).

AM Stereo Systems Ratings Matrices

In the notice, the FCC revealed the original ratings matrix which had led the Commission to its selection of Magnavox. The revised matrix was also included Apparently, the revised matrix convinced the FCC that a repeal of the Magnavox decision may have indeed been the best overall AM stereo system in the original consideration, but that Motorola clearly won round two (see Table 1).

Table 1

FCC rank order of AM stereo systems*

Original Matrix	Revised Matrix
Magnavox (73)	Motorola (67)
Belar (71)	Magnavox (51)
Motorola (64)	Kahn (51)
Harris (63)	Harris (50)
Kahn (59)	Belar (41)

*Table based on FCC matrices (FCC, 1980, pp. 4, 9)

Also under the notice the FCC encouraged any and all manufacturers, proponents of the marketplace, multisystem decoder advocates, and backers of the single system to provide any information which might help in the final AM stereo decision. However, the FCC emphasized that in the event no feedback was received, a decision would be made anyway:

> We are confident that if we received no further information at all, and were forced to use only the information on hand, we are in a position to choose an AM stereo system which would serve AM broadcasters and the American public very well. (It's official, 1980, p. 40)

Response to the FCC's Further Notice

By mid-February 1981 the FCC had received an enormous

number of comments about AM stereo. Of the five manufacturers, only three provided new, pertinent technical information. Kahn remained practically status quo by issuing a miniscule amount of information on the system itself. Kahn chose instead to lobby for the marketplace. The sentiment at Kahn focused on the idea that the best system would be publicly accepted -- and, presumably, that system would be Kahn/Hazeltine (AM stereo gets another, 1981, p. 84). Kahn's lack of action proved surprising in a sense, in that the FCC directed a "specific question" about a problem with the Kahn system's inability to reduce a sufficient amount of outside noise. No questions of the sort had been asked of the other manufacturers (It's official, 1980, p. 40).

Belar Electronics elected to be removed from any further participation in the AM stereo battle. The feeling at Belar was that any effort would be futile. President Arno Meyer succinctly stated, "We didn't want to keep pouring money down the bottomless pit" (AM stereo gets another, 1981, p. 84). Motorola officials, although quite confident with the outcome of the FCC revised matrix, suggested several ways the evaluation could be improved. They sent the FCC additional information on the Motorola system, altered some of the FCC findings, and even clarified some of the terms the FCC had used. The Harris Corporation conceded that the FCC had enough positive data on the Motorola system to make it the sole AM stereo system for the industry. However, Harris criticized the FCC matrix, calling it an inadequate measuring stick for the purposes at hand. Harris offered many reasons for the contention:

> The matrix will not only fail to assist the FCC in picking the best system, but will also "mislead" the FCC . . . . The flaws

> of the matrix include improper data selection, invalid and unfair comparisons, computational errors, evaluation scales unrelated to real-world broadcasting conditions and blatant omissions of categories vital to a proper decision. . . . (p. 84)

The Deregulation of Radio'

From September 1980 until March 1982, the FCC failed to act on the AM stereo situation. But, the Commission was not inactive in other matters. The anticipated Deregulation of Radio docket was finally released on Tuesday, February 24, 1981. The deregulation was scheduled to take effect on April 3, 1981 (FCC, 1981, p. 13888).

The Commission addressed the radio deregulation issues, primarily reduction of paperwork and reduction of content regulations, which were raised in the 1979 notice. The FCC stated:

> The Commission is eliminating its current processing guidelines relative to the amounts of nonentertainment programming which commercial radio stations should provide and the number of commercial minutes per hour which they should not exceed. Additionally, the Commission is eliminating its community ascertainment requirements and its program log keeping requirements for commercial radio stations. The action is being taken to reduce the paperwork and other burdens on commercial radio stations without having a substantial adverse impact upon the public interest. (p. 13888)

In regard to the development of AM stereo, perhaps the most critical words in the proceeding appeared in paragraph 15. The Commission wrote that "numerous" respondents to the initial deregulation docket were quite concerned about possible Commission attempts "to replace the statutory 'public interest' concept with the 'marketplace' concept" (p. 13890). The FCC explained its position:

> We believe that this is an erroneous analysis of the proposals made in this proceeding. It is not the public interest

> standard that we proposed to eliminate. That standard is contained in the Communications Act of 1934, as amended, and could not be changed by us even if we wanted to. That is a job for Congress. Rather, since marketplace solutions can be consistent with public interest concerns, we sought to explore in the proceeding the question of whether or not in the context of radio the public interest can be met through the working of marketplace forces rather than by current Commission regulations. Again, that issue does not contemplate the elimination of the standard, only a debate over what the standard requires and what methods are best suited to meet that standard in the most efficient way and at least cost to the public. As discussed in the Notice, the public interest standard has never been regarded as a static concept and was utilized by Congress in enacting the Communications Act so as to provide the Commission with the maximum flexibility in dealing with a rapidly and dynamically changing technology and industry. (p. 13890)

The Commission had revealed a loophole which had existed since the Communications Act of 1934. For standards issues, the FCC had the legal right to set minimum technical requirements, but could allow the marketplace to work within those parameters.

The FCC and Industry Response: A Bold New Step

After nearly two years of AM stereo standards deliberation, the FCC, in effect, decided not to make a decision. On March 4, 1982, the FCC adopted a "Report and Order (Proceeding Terminated)," which revealed an intention to allow the marketplace to decide the fate of AM stereo (FCC, 1982, pp. 1-32).

Much of the document reviewed all the past AM stereo notices, up to and including the Magnavox decision. The Commission explained that it had "received many comments from broadcast licensees objecting to its initial preference of the Magnavox system," especially in the area of technical problems with poor sound quality in the system (p. 5).

In response to the Commission's call for comments in the September 11, 1980, docket, there were 123 formal comments and 17 reply comments" from "33 parties" (p. 6). Many of the

respondents addressed issues such as multisystem decoders, selection of a standard by government as opposed to the marketplace, and implementation of a lottery. Those who contacted the FCC generally supported one of the above selection procedures.

Kahn/Hazeltine, the American Broadcasting Company (ABC), and the National Broadcasting Company (NBC) supported selection by marketplace. All of them believed AM stereo had experienced too many delays while the Commission mulled over a single system standard. General Electric Corporation, however, advocated picking a standard, but "was concerned that the Commission did not explain how it believed the marketplace would select the 'best' system" (p. 6-7). GE believed the listening public would have little say in the selection process because "transmission" is a "necessary precedent to reception" (p. 7).

Many respondents wrote in regard to multisystem receivers. Companies including Sony, Matsushita, National Semiconductor, and the Consumer Electronics Group of the Electronics Industries Association (EIA/CEG) commented that multidecoders were impractical for two basic reasons: (1) high cost; and (2) impracticality of developing switchers capable of automatically decoding the five systems (p. 8).

Concerning replies received on selecting a system by lottery, the FCC said:

> Generally, those who responded to the suggestion of selection by lottery were not in favor of this procedure for selection of a single AM stereophonic system based on their belief that sufficient technical information was available upon which a single choice could be made. (p. 9)

After weighing all the options, the Commission concluded:

> After pouring this relatively large level of resources into this continued proceeding, the Commission finds that any

> decision for one AM stereo system would be highly tenuous. Of equal or greater importance, the Commission has reconsidered its earlier rejection of allowing a market determination of an AM stereo system or systems and is now persuaded that such a reliance on market forces in the present instance is the most prudent course to follow. (p. 9).

The FCC's Third Matrix

The FCC included in the docket a third matrix of systems ratings. Before defending its decision to open AM stereo to the marketplace, the Commission elected to discuss the work which had been done in assessing technical capabilities of the systems. The third matrix ranked the five systems as follows: Magnavox (76), Harris (72), Motorola (71), Kahn (65), and Belar (58) (FCC, 1982, p. 13; FCC issues 'tenuous', 1982, p. 72). The Commission listed and explained three reasons for its marketplace decision:

> First, the data possessed by the Commission are incompatible in some instances since no uniform test procedures were employed. Second, the weights assigned to the various factors and the engineering judgements employed are subject to variance depending on the analyst. Finally, the results obtained are close even if the data and the methodological difficulties were absent. Thus, from the results in the evaluation table, no clear choice is apparent in any case. (FCC, 1982, p. 14)

In support, the FCC again emphasized the readiness of "two major broadcast networks," ABC and NBC, to place trust in the hands of the marketplace. The Commission admitted: "Private markets do not always function perfectly and with instantaneous speed; however, neither do government decision makers" (p. 14). In keeping with attitudes expressed in the radio deregulation dockets, the FCC reserved the right to enforce technical standards:

> The only concern that the Commission retains is that any AM stereo system employed must not interfere with the services of other users of the electromagnetic spectrum, it must comply with all international agreements and must furnish a stereo service that conforms to our basic technical requirements for

stereo. (p. 14)

The Commission indicated that "benefits in three fundamental areas" were expected. First, private interests would be able to "assign their own value weights" to various technical aspects of the systems --possibly in disagreement with scores given by the FCC (p. 14). Secondly, the Commission believed technological change would be facilitated:

> Essentially three types of technological development are possible and are affected by this decision. The first type, which may be completely eliminated by the government mandating a single system, is development of new systems or products . . . . A second type of technological development concerns breakthroughs related to production processes which have cost reducing effects. Not only does free and open competition among manufacturers of the alternative systems permit exploration of ways to reduce the cost of existing systems, it provides a strong incentive for that development since each manufacturer will compete for adoption of his system. (p. 15)

The Commission listed the third kind of technological change as "improvement in the quality of existing systems" (p. 15). The Commission explained that competition would ensure quality.

The Commission argued, a major reason for eventually going with the marketplace was the creation of a monopoly by picking one system:

> 50. In addition to the costs on society by slowing or preventing technological change, there are costs to society resulting from a loss of competition on price among manufacturers of the systems. By selecting a particular system, the government would be giving an outright grant of monopoly to the manufacturer of choice albeit with the condition that he share part of his monopoly privileges to patent holders as a reward for their inventiveness. However, government removal from the market of other patented substitutes clearly enhances the value of the lone remaining patented system. Furthermore, society itself elects to pay a patentholder his higher prices in a free market in order to enjoy the benefits of his product. In the case of a government mandated system, it is government who decides that the public may only buy the products of a particular manufacturer at his monopoly prices rather than individuals making their own choices. (p. 15)

The FCC conceded the marketplace would experience costs as well as benefits. In the case of AM stereo, the biggest drawback was the incompatibility of the five systems. But, the Commission believed the broadcasters, listeners, and manufacturers of receivers and systems were capable of selecting an AM stereo transmission system which would meet individual requirements (p. 15).

Finally, the Commission offered "several market outcomes" which could occur (p. 16). The FCC said the most obvious event might be the ultimate selection of one system. Furthermore, that system would be much improved within FCC technical parameters, particularly after competition with other improving systems. Conversely, it was also possible "no system would be chosen" (p. 16). The FCC reckoned that in such a case it would be "obvious" that consumers felt no desire to employ stereo reception (p. 16). Still another possibility suggests the competing systems may not be "adopted widely enough to sustain AM stereo in the market" (p. 16).

The FCC left open one vague possibility that a standard might be picked by government in the future. According to the FCC, "nothing appears to differentiate the AM radio market from most of the other markets in the U.S. economy" (p. 16). However, the Commission seems to leave itself open for possible intervention into the selection process. The Commission stated: "A very strong case would have to be made in order to override the inherent benefits of consumers making their own choices rather than having their decisions made by government" (p. 16).

The Commission concluded its comments by calling the AM

stereo decision "a bold, new step for the Commission to take" (p. 17). Paragraph 62 of the Report and Order stated: "IT IS FURTHER ORDERED, That this proceeding is TERMINATED" (p. 17).

Conclusion

Clearly, the FCC of the late 1970s and early 1980s was uncertain of its proper regulatory role. The Commission began its AM stereo inquiry the same way it had other technical standards procedures. The first step was to adopt its official notice of inquiry into the feasibility and desirability of the stereo technology. Upon establishing a need for AM stereo, the Commission followed up with its notice of proposed rulemaking. In 1980, the FCC announced that it had completed its studies and would select Magnavox as the industry's national AM stereo system standard. However, the FCC appeared to experience much internal turmoil over its selection of one standard system. As a result, the "tentative" decision was overturned. Until the FCC's hesitation over the standards issues, the AM stereo process had taken approximately the same three years as FM stereo approval from start to finish. But the Commission was beginning to experience a shift to a different policy position on selecting technological standards.

When the FCC decided to reexamine its selection of Magnavox as the industry AM stereo system standard, the discussions took on a greater magnitude than that of defending one system. Apparently, the Commission wrestled with the idea of whether it was necessary to even set a technological standard. The FCC questioned its own responsibility in such matters.

Should the Commission be burdened with picking one system and eliminating all others? Or, should the FCC's primary concern be one of technical traffic cop? Ultimately, the FCC determined that it was not responsible for the success or failure of any particular technology. Therefore, the duty of selecting the proper technology would, for the first time in FCC history, be passed on to the marketplace.

After five years in the marketplace, the FCC still had not wavered on its marketplace stance. As promised, the Commission intervened only to police technical rule violations. Despite pleas from various players in the AM stereo story, the Commission refused even to comment on AM stereo. However, as 1987 ended, rumors abounded that the FCC would finally release a statement of at some point in 1987 -- possibly to reinforce its commitment to the workings of the marketplace. It was doubtful, though, that there would be any further action taken by the Commission.

NOTE

[1] The FCC's deregulation of radio was a complex and time-consuming endeavor. Indeed, the deregulation of radio warrants an entire study of its own. Many articles exist which detail deregulation of radio. To gain a better understanding of the topic, the following articles may be helpful (note that the articles cover reregulation, deregulation, and unregulation): Abrams (1978, 1979, 1980, 1981); Black (1984); Brown (1981, 1983, 1984a, 1984b); Brown (1979); Chisman (1977, 1982); A conversation with Mark Fowler (1985); Dawson: Dedicated (1983); Dawson (1984); Dawson: Strongly (1982); Dawson urges (1983); Deregulation: The chairman (1985); FCC files: Technical deregulation (1985); FCC's deregulation causing (1986); FCC lifts radio regs (1981); The Ferris approach to regulation (1979); Ferris on Ferris (1980); Fields (1982, 1983); Fogarty: A supporter of (1983); Fogarty (1982); The Fowler commission track record on deregulation (1984); Fowler: Dedicated (1982); Fowler describes (1983); Fowler (1981, 1982a, 1982b, 1983, 1984a, 1984b, 1985); Fowler: Policy (1981); Fowler sings (1985); Fowler: Stands (1983); Fowler still (1985); Fowler tells (1985); Friedman (1980, 1981).

From public interest to marketplace (1985); Geller (1982, 1985); Harris (1979, 1981, 1983, 1986); Helein (1986); Herwitz

(1985); Hooks (1977, 1981); In wake of (1983); Jassem (1983); Jones (1981); Jones: Initial (1983); Krasnow (1982, 1983); Laissez-faire approach (1980); LeDuc (1982); Life at the Fowler FCC (1986); Loevinger (1982); Mark Fowler's great experiment (1984); The myth of deregulation (1983); New staffers (1979); Pratte (1985); Quello (1985); Radio dereg gets (1983); Regulation by marketplace (1980); Rivera (1982, 1985); Rowland (1982); Smythe (1982); Technology: Waiting for the marketplace (1983); Ten years after (1984); Twenty-five years of FCC chairmen (1978); White (1977); and, Wiley (1977).

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